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A Question of Nomenclature.

(*With one Plate.*)

BY S. W. GEISER.

An unique point of nomenclature may be found in an inaugural thesis presented by Laurent M. Philipsson, at Lund, in Sweden, in 1788. The thesis engages itself in the description of a number of new genera and species of mollusca. Because, chiefly, of a university usage of the day, by which the authorship of all theses defended was referred to the professor under whom the work was done, much confusion has arisen in regard to the one who is to be considered responsible, nomenclatorially, for the new zoological names; and by some authors they are referred to Retzius, the master, while others hold Philipsson, the respondent, as the author. A year ago, Dr. C. W. Stiles pointed out the unique nature of the questions involved in determining the authorship of the thesis, and urged me to furnish a brief of the case, with references, to the International Commission of Zoological Nomenclature for an opinion. The following is presented as the evidence as to whom we should consider the authority, according to the International Zoological Code, for the new names contained in the thesis noted.

Briefly, as may be seen from the facsimile title page herewith presented, the thesis is a natural-history dissertation, on new genera of shells, which was presented at a public examination, 10 December, 1788, by Laurent M. Philipsson, under the presidency of his master, Professor Regius and Ordinary, A. J. Retzius, M. D., of the University of Lund. It contains iv + 23 small octavo pages. It is dedicated to Baron Frederic von Dalman and to Countess Dalman.¹

¹ *Sacrae Regiae Majestatis* | *Magnae Fidei Viro et Cubiculario* | *Nobilissimo et Generosissimo* | *Domino* | FRIDERICO a DALMAN | *D: no de*

After a number of pages devoted to general observations on the mollusca, we find descriptive notices of the new genera and species. These new genera, with their new and transferred species are given below, together with a citation to the page upon which the original diagnosis may be found. They are as follows:

TRICLA n. g. [=gizzard plates of *Scaphander*]. p. 8.

T. Gioeni, n. s., p. 8.

PLACENTA n. g., p. 15.

P. orbicularis n. s. (= *Anomia placenta* L.), p. 15.

P. quadrangula n. s., p. 16.

P. Ehippium n. s., p. 16.

UNIO n. g., p. 16.

U. Margaritiferus (L.) p. 16.

U. crassus n. s. p. 17.

U. tumidus n. s. p. 17.

U. pictorum (L.) p. 17.

U. ovalis n. s. p. 17.

U. corrugatus (Schröter) p. 18.

CHAENA n. g., p. 19.

C. Mumia (Spengler) p. 19.

C. cuneiformis (Spengler) p. 19.

C. Cymbium (Spengler) p. 20.

PERNA n. g., p. 20.

P. Magellanica (= *Mya Perna* L. = *Magellana major* Argeno.) n. s., p. 20.

P. striatula (L.) p. 21.

P. mediterranea (= *Mytilus bidens* L.) p. 21.

Fledingstorp etc. | Maecinati Gratosissimo | Grata et Submissa Mente | Hanc
Opellam | D. D. D. | Devotissimus cultor | Laur. M. Philipsson.

à | Madame | CHARLOTTE JEANNE | DALMAN, | née Comtesse
de SNOILSKY, | Madame la Comtesse! | Qu'il soit permis très gracieuse
Comtesse de | vous offrir cet ouvrage Academique, qui renferme | la description
d'une partie des plus belles & des | plus precieuses productions de la nature.
Si vous | daignez lui accorder la protection de votre nom | illustre, je serai
d'autant plus au comble de mes | vœux, que j'aurai en meme tems l'honneur
de | vous rendre une marque publique du profond re | spect avec le quel je suis |
MADAME LA COMTESSE |

| votre |
| très humble & très obeissant |
| Serviteur |

| LAURENT M. PHILIPSSON. |

P. viridis (L.) p. 21.

P. marmorata n. s. p. 21.

P. biocularis (L.) p. 22.

P. sulcata n. s. (= *Mytilus exustus* L.) p. 22.

MELINA n. g., p. 22.

M. semiaurita (L.) p. 22.

M. pernaformis n. s. (= *Ostrea Perna* L.) p. 23.

M. Isogonum (L.) p. 23.

M. Ehippium (L.) p. 23.

It will be seen from the foregoing that there are quite a number of names that are by some authors referred to one authority and by others to another. The question is therefore of some importance. Inasmuch as most of my study has been upon the freshwater mussels and, as a consequence, I am more familiar with the literature of the *Unionidae* than with any other molluscan family, and as an important genus of the *Unionidae* is described in the thesis in hand, I will take the part for the whole and deal with the authorship of *Unio*. In order to state properly the problem confronting us, I shall quote from various authors, published and manuscript regarding the authorship of *Unio*:

1. "Genus UNIO Retzius.

"It seems impossible to ascertain with certainty who is the author of this genus. In 1788, Laurentius Münter Philipsson described it in a thesis delivered under the presidency of his master, Retzius, [reference] at the University of Lund, in Sweden, at a public examination for a doctor's degree. Whether Philipsson or Retzius should be credited with the genus can not be positively known, as it is believed by some that the master was the author of the dissertation, which the student merely defended. I am inclined to take this view of the matter, for the reason that Retzius was an author of repute, while it is not known that Philipsson ever gave any attention to natural history or was the author of any genera or species before or since."—Simpson, Charles T., in *The Classification and Geographical Distribution of the Pearly Fresh-water Mussels*. Proc. U. S. Nat. Mus. XVIII: 300 [1896].

2. "This genus was described in a thesis by Laurentius Münter Philipsson under his master Retzius, in the University of Lund, Sweden, and it is often credited to the former. I am informed by Professor Joh. Chr. Moberg, of Lund, that by a former law or custom of the University, the professor was considered the

author of all papers which a student under him defended. According to this, Retzius must be credited with the genus. This law was repealed in Lund in 1852."—Simpson, Charles Torrey, in *Synopsis of the Naiades, or Pearly Fresh-water Mussels*. Proc. U. S. Nat. Mus. XXII.: 679, footnote. [1900].

3. "The real author of the 'Dissert. hist. nat. nova test. genera' was A. J. Retzius, the respondent, Philipsson merely took his degree for undergoing examination on the subject after the custom of those times, especially in Sweden."—B. Woodward, (British Museum) in letter to Librarian. Upper Iowa University, 7 May, 1912.

4. "The genus *Unio* was defined in a thesis written by Retzius the præses and Philipsson got his degree for defending it in public as was the practice of the time. Frequently the thesis would be apportioned out to two or more students and frequently one half of a word will appear at the end of one respondent's part and the rest of it in the next man's and the two separated by the new title page and dedication to parents.

"Occasionally only did a brilliant student write his own thesis and then there usually appears on the title page "auctor respondens"—or some such phrase.

"That this was the custom, you will find set forth in Linnaeus' 'B bl. Bot.' 1736, p. 52.

"There is not the slightest doubt as to Retzius being the author of the thesis in question."—B. Woodward (British Museum), in letter of 10 June, 1912.

5. "As to the authority for *Unio*, it is well established that it is due to Retzius. If his name does not appear as author on the printed thesis, neither does Philipsson's. The paper is merely said to be 'presented' (*defert*) by Philipsson. When a paper was presented by its author, 'auctor' was used. These theses were presented and defended, (and still are) before the examining board of the University without reference to authorship. Philipsson's thesis was not 'published.' It was printed by the Berling Press at Lund, but bears no publisher's name. So, as he claims no authorship, and there is no publisher, and we know from contemporary usage that Retzius did write it, it seems to me to be stretching a technicality to the breaking point to say that we must credit the genus to Philipsson. I shall never do it, and so advised Simpson."—Dr. W. H. Dall, in Letter of 13 Feb., 1912.

Such is a statement of the problem by some of the malacologists of America, and of England. It is indeed one interesting and unique.

To what extent continental and English authors are inclined to credit Retzius with these genera, I can not say. Certain it is that a number of German systematists have referred the genera involved to Philipsson. But one author comes to me now: Dr. Rudolf Hoernes, in his *Paläontologie*, who considers Philipsson as the author of the thesis (cf. genus *Unio*). Most American authors, following in the steps of Mr. Simpson, Dr. Dall, and Dr. Ortmann,¹ refer *Unio* and the other genera described in the thesis to Retzius. But before taking up the discussion of the various points in issue, the provisions of the code governing such usage, may be quoted:

International Zoological Code, Art. 21. "The author of a scientific name is that person who first publishes that name in connection with an indication, a definition or a description, unless it is clear from the contents of the publication that some other person is responsible for said name and its indication, definition or description." And in commenting on this section of the Code, Dr. Stiles remarks in part:

"This point of view lays stress upon holding an author responsible for the names he publishes, rather than upon 'giving him credit' for those names.

"The chief idea we have in citing the author of a name is to aid in tracing it. If now we cited Smith & Kilborne, instead of Wandolleck, as author of *Apiosoma*, or instead of Patton as author of *Piropasma*, we might lead our colleagues to search long in writings of Smith & Kilborne for a name which they perhaps never used even in correspondence."—Stiles; Ch. Wardell, in *The International Code of Zoological Nomenclature as Applied to Medicine*. Hyg. Lab., U. S. Pub. Health & Mar.-Hosp. Serv., Bull. XXIV: 21 [1905.]

Questions to be answered satisfactorily are then: (1) Was the thesis published? What constitutes publication? (2) The purpose of author-citations in zoological names. An interpretation of Art. 21, International Zoological Code. How does it apply in the present case? (3) The validity of a tacit or written law of

¹ Ortmann, A. E. *The Use of the Generic Names Unio, Margaritana, Lymnium and Elliptio, etc.* Nautilus XXV: 89 [De 1911].

a University affecting the authorship of zoological names under the Code. (4) Do we have any internal, specific statement or evidence that Retzius is the author of the thesis? Upon the evidence adduced, we must draw our conclusions.

(1) Dr. Dall in his letter of 13 Feb. 1912, expresses the opinion that the thesis is not "published." He does this upon the basis that no publisher's name appears upon the title page, the ablative phrase alone "Typis Berlingianis" being used. But he clearly involves himself, since, while denying the publication of the thesis thus, in 1788, he would assign the genera to Retzius, of that year. Again, if we were to reject as unpublished, all zoological names contained in theses upon whose title pages the word "published" or its equivalent, in Dr. Dall's opinion, did not appear, we would be obliged to reject names wholesale. If Doctor Dall's contention were valid, then the authorship of these molluscan genera should be referred to the next author who used the names given by Philipsson. The genus *Unio*, for example, if I mistake not, would then be referred to Bruguière, 1792. Even the obsolete provision of the old codes regarding manuscript names recognized and used by authors, and in the *first publication*, recognized and credited to the manuscript author, would not operate. If we can accept as evidence of publication "the act of making known, or offering to the public by sale or gratuitous distribution," clearly this thesis is as truly published as any thesis ever was.

(2.) As Doctor Stiles states, in his remarks on Art. 21, of the Code, previously quoted, while primarily the International Zoological Code aims to give to each author of a scientific combination the fullest justice possible, yet the purpose of the Code in its rules regarding authority for names is chiefly to assist in tracing names generic and specific to their sources in zoological literature.

We have considered that the thesis was published. The next question is, who is the publisher. As will be seen from the title page, the name of the master Retzius appears in the largest type, and hence it has been inferred by some that the authorship of the master is thus intimated. Passing this contention, which is without any objective foundation, we come to the question of the publisher of the thesis. We may well consider, it seems to me, the person who bore the expense of the thesis-publication as the publisher, everything else being equal. And as the code recog-

nizes as the author, the "one who first publishes the name * * unless it is clear, from the contents of the publication that someone else is responsible for said name," we must consider Philipsson the author. For by universal contemporary usage, and by university usage everywhere before and since, the candidate publishes the thesis, bearing all expense if the manner of publication is independent, as in the present case. So universal has been this usage in academic circles that we have no reason for questioning Philipsson's publication of the thesis. Furthermore, inasmuch as no one else than the respondent and publisher is specifically cited as the author of the thesis, we must consider the defendant and publisher as the nomenclatorial author. In this connection, Mr. B. Woodward, of the British Museum, feels that "Art. 21 of the Internat. Z. Code—or at least the latter part of it seems to refer to such case where one man's description of a genus or species is incorporated in another man's paper and consequently does not apply to the case in point." But it seems to me that the spirit of the Article is plain: that it applies in the present case, and that its operation is not restricted to such cases as Mr. Woodward cites, such as we find, for example, in the case of *Lampsilis fallaciosus* H. M. Smith, 1899.

(3.) In Mr. Simpson's papers, he contends that a local or provincial university law or custom should suspend or supersede the operation of the Code. As quoted before, Mr. Simpson refers to a communication from Professor Moberg, of Lund, in which the latter says that by a former law or custom of the University, the professor was considered the author of all papers defended under him. And then, he, as it seems to us, unwisely, added: "According to this, Retzius must be credited with the genus." This too in the face of the fact that there is nothing in the thesis itself to indicate that anyone other than Philipsson should be considered the author. I am informed that such a law with regard to work in chemistry has been in force among German universities up to very recent times. The vital question is whether the existence of such a custom satisfies the provision of the code section: "unless it is clear from the contents of the publication that some other person is responsible" for the work presented. To me, it seems that it does not. Unless the credit is given so that a student in a foreign country, unacquainted with local customs and regulations, can understand who is to be held responsible, such provision is not

satisfied. Nor can the at best negative evidence adduced by Mr. Woodward and Mr. Dall be considered as satisfying the provision, for the name "auctor" was not universally used in case the respondent was actually the author of the thesis. What is on the thesis title page or in the thesis itself is the only thing which should determine the systematist's judgment. As Dr. Stiles has said, "I do not see how I could be supposed to know the regulations regarding the theses presented at the foreign Universities, X, Y, Z."

(4.) The argument of probabilities as to authorship is brought forward. Yet it must be remembered that we are not dealing with *possibilities* or *probabilities*—should not, indeed—in the fixing of the responsibility for the names in question. Whether Philipsson did or did not publish any other zoological contributions either before or after 1788 is a matter that does not concern us here. The chief reason for ascribing the genera to Retzius is simply this: the argument of probabilities. This, together with the university usage of Lund, is the sole ground for erroneously referring the genera to Retzius as the nomenclatorial authority.

Despite the recent discussions in German zoological circles relative to the work of the International Commission of Zoological Nomenclature and the Code; the work of the Commission has been most helpful and of far reaching value. It is highly important that we should have an International court of last appeal in things nomenclatorial, in order that we may progress from conflicting codes and a chaos of scientific names to order and uniformity of usage. The International Code, while it may be in some cases apparently unjust in its verdicts, if universally followed, would bring us to the haven of nomenclatorial uniformity, and remove one of the most wearisome and useless tasks of the zoologist, the untangling of the skein of synonyms and homonyms.

Then, clearly, because of the assumed responsibility for the publication of the thesis, Philipsson must be considered the publisher. Since no other person is indicated in the thesis as responsible for its contents, we must consider him the author. Neither the absence of the words "auctor respondens" from the thesis titlepage, nor the tacit law of the University of Lund satisfies the requirements of Art. 21 of the Code. Consequently, again we must consider him the author. The argument of probabilities does

not enter into the consideration of the problem whatever. It is not primarily a question with us whence Philipsson gained his knowledge of these genera, which in the thesis above noted he described as new. That was a matter of interest almost alone to Philipsson. What we are interested in is whence biological science first learned of the genera described. And in answer to our inquiries we find that Philipsson is to be considered as the authority for these molluscan names. The genera, then, and their included species of this thesis, should be cited, *Placenta*, *Chaena*, *Melina*, *Perna*, *Unio*, all of Philipsson, 1788.

*The Consolidated Schools
of Brandon, Iowa.*

Independence, Iowa.

Notes on Our Local Plants.—III.

BY J. A. NIEUWLAND.

Order 10. LEMNALES.

Family 20. **LEMNACEAE** S. F. Gray, Nat. Arr.
Br. Pl. II, p. 729, (1821).

Lenticulaceae Dumortier, Comment. Bot. p. 67 (1823).

Lemnaceae Dumortier Flor. Belg. p. 165, (1827), also An.
Fam. Pl. p. 61, (1829).

BRUNIERA Franch. in Billotia 25 (1864) *Wolfia* Horkel ex Bartling, Ord. Nat. Pl. p. 76, (1830.)¹ *Wolffia* Horkel ex Schleiden, Linnaea, XIII, p. 389, (1839). *Wolffia* Kunth, Enum. Pl. III, 4, (1841), not *Wolfia* Dennst. Schluess. Hort. Malab. 38, (1818), nor *Wolfia* Sprengel, Syst. I, 808, (1825), nor *Wulffia* Necker, Elem. I, 35, (1790).

¹ Since my last notice on the synonymy of these plants, I have found that the first publication of the name *Wolfia* as applied to the Lemnaceous plants was spelled with one f. In this form which has priority over the name spelled with two f's, it is therefore an unequivocal synonym to the pre-existing names also spelled in the same manner with one f. There can then be no excuse for retaining the name in our floras.

Grantia Griff. ex Voigt. Hort. Suburb. Calc. 692, (1845), et Notul. III, p. 223, (1851), not *Grantia* Bois. Diag. Ser. I, VI, p. 79, (1845).

Horkelia Reichenb. ex Bart. Ord. p. 76, (1830), not *Horkelia*, Cham. & Schlecht. in Linnaea, II, p. 26, (1827).

Bruniera columbiana (Karst.) Nwd. Am. Mid. Nat. Vol. II, p. 306, (1912).

Wolffia columbiana Karsten, Bot. Untersuch. I, p. 103, (1865-67).

Grantia columbiana (Karst.) MacM. Metaspermae Minn. p. 134, (1892).

Very common everywhere especially with *Hydrophace minor*. Notre Dame, Lakeville, Chain Lake, Benton Harbor, St. Joseph, Millers, Tamarack. It is never found in pools that dry up completely even part of the season.

Bruniera punctata (Griseb.) Nwd. l. c.

Wolffia punctata Griseb. Fl. Br. W. Ind. p. 51, (1864).

Wolffia brasiliensis Wedd. Am. Sci. Nat. III, 12, p. 170, (1849)

Notre Dame, Ind., rather scarce. South Bend, Pond near Rum Village.

HYDROPHACE Haller, Helv. 3. p. 68, (1768). [Buxbaum, cent. II. t. 37, f. 2.]

Lenticula and *Lenticularia* Micheli Nov. Pl. Gen. p. 15, p. 11, not always that of the other pre-Linnaean older authors.¹ *Lens palustris* and *Lenticula palustris* or *aquatica* of the older botanists; but perhaps a generic specific binary name. *LEMNA* Dalechamps (1580) Linnaeus Syst. Nat. (1735). Gen. Pl. p. 325, (1737), also p. 417, (1754). Sp. Pl. p. 970, (1753) not *Lemma* or *Lemna* Theophrastus = *Marsilia vulgaris* Linn. *Staurogeton* Reichb. Norm. 33, (1841) in part.

¹ The name *Lenticula palustris* or *Leus palustris* of the pre-Linnaean writers seems to me to be inadmissible because of the similarity to the recognized genus *Lens*. *Lemma* Theophrastus was certainly not *Lemna* Linn., but rather *Marsilia vulgaris*. *Lemna* Linn. is the *φαζὸς ὁ ἐπὶ τῶν τελευτῶν* of Dioscorides. It seems best to disregard *Lenticula* and *Lens* also because the names seem to be generic-specific binary names like *Lilium Convallium*. See. Bubani, P. Flora Pyrenaea 4, p. 22, 23, (1901).

Hydrophace trisulca (Linn.) Bubani, Fl. Pyr. 4, p. 23, (1901).

LEMNA TRISULCA Linn. Sp. Pl. p. 970, (1753), *Lenticula palustris* of the pre-Linnaeans. *Lenticula aquatica trisulca* C. Bauhin, Pin. p. 362, (1623) *Hederula aquatica* Lobelius, Ic. (1579) *Staurogeton trisulcus* Schur. Verh. Siebenb. Ver. Naturw. IV, p. 70, (1853).

Very common on all stagnant ponds and pools that do not dry up part of the season. Notre Dame, Ind. No. 10568, (St. Joseph Co.) also South Bend, Mishawaka, Lakeville, Pine, Warwick near the Michigan State boundary. Springbrook Park, Wharton Lake, Dollar Lake and Chain Lakes. Hudson Lake, (Laporte Co.) Michigan City. Tamarack and Smith (Porter Co.), Millers and Dune Park (Lake Co.), also near Granger (Elkhart Co.), New Buffalo, Michigan, Bertrand, Niles, St. Joseph, Benton Harbor, Baroda, Stephenville, (Berrien Co.), Bankson Lake and surrounding ponds (Cass Co.), Lake Maxinkuckee, (Marshall Co.) H. W. Clarke. I have never been able to find it in bloom.

Frequently when submerged it continues to grow vigorously but fails to produce any roots for generations under these conditions. This condition I have noticed for several years in specimens preserved in the laboratory.

Hydrophace minor (Linn.) Bubani, do.

LEMNA MINOR Linn. do *Lenticula aquatica* Brunfels, *Lenticula palustris* Tragus *Lens palustris* Camerarius Epit. 852 also Ray. Angl. 3, p. 129, t. 4, f. 1.

Very common like the preceding. I have found it in bloom at Notre Dame, along the I. I. I. R. R. in May, 1907. No. 10564, but not since then. The flowers appeared from a cleft in the edge of the thalloid shoot and consisted of one or two stamens, when latter of different ages. The anthers were subglobular papillose and pure white in color. The pistil is short styled and almost completely embedded within the cleft and bractlike covering at the base. Flowering specimens were not abundant, only one in about 150 to 200 plants producing flowers. These were, however, perfectly evident to the naked eye because of the whiteness of the stamens. Collecting and separating out the following plants was a very tedious operation.

SPIRODELA Schleiden, *Linnaea*, XIII, p. 391, (1839).

LEMNA Linn. l. c. in part. *Telmatophace* Godr. Fl. Lorr. ed. 1, t. 3, p. 18, also Mey, Fl. Hanov., p. 543, No. 2, also Bubani, Fl. Pyr. IV, p. 24, (1901).

Spirodela polyrhiza (Linn.) Schleiden l. c. p. 392.

Lemna polyrhiza Linn. l. c.

Common in pools. Notre Dame No. 10567, South Bend, near Nutwood, Lakeville, Dollar Lake, Chain Lakes (St. Joseph Co.). Hudson Lake, Sagunay, Laporte, Michigan City, (Laporte Co.). Millers (Lake Co.), Mineral Springs, Tamarack, and Smith St. Joseph, Bertrand, Benton Harbor, Mich. (Berrien Co.); San José Park near Lawton, Mich., (Cass Co.).

Order II. AROIDEAE.

Jussieu Gen. Pl. p. 23, (1789) also Bartling, Ord. Nat.

Pl. p. 25, (1830). (Under name of Class.)

Arales Britton, Man. Fl. 2nd Ed. p. 5, 229.

Family 21. ARACEAE Necker, Act. Acad. Theod.

Palat. 2, p. 462, (1770).

Piperitae Linn. Phil. Bot. p. 27, (1751) in part, also do. (1755).

Callaceae Bartling, l. c. pp. 25 and 67, in part.

ARISAEMA Martius, Flora, 14 p. 459, (1831).

Arum Linn. Syst. (1735) Gen. Pl. p. 277, (1737), p. 431, (1754) Sp. Pl. p. 964, (in part).

Arisaema triphyllum (Linn.) Torrey, Fl. N. Y. 2, p. 239, (1843).

Arum triphyllum Linn. Sp. Pl. p. 965, (1753).

Notre Dame, Ind., Nos. 10566, 3304, 2491, 831. Near St. Mary's Academy along the St. Joseph River, (Dr. F. Powers). I have found it also at Lakeville, Sagunay, Granger, Sweeney's, Nutwood, Mishawaka, South Bend, Woodland, Pine, Terre Coupée, Chain Lakes, in the Kankakee Marsh (St. Joseph Co.), Smith, Tamarack, Warren, Mineral Springs (Porter Co.), Millers, Dune Park, Michigan City, Munich, Mich., St. Joseph, Benton Harbor Niles, Bertrand, Bankson Lake, Grand Beach, Galien, Mich. Also in Elkhart Co. Lake Maxinkuckee, H. W. Clarke.

MURICAUDA Small, Fl. S. E. U. S. p. 227, (1903).

Arisaema Martius l. c. in part.

Arum Linn., l. c. in part.

Muricauda Dracontium (Linn.) Small, l. c.

Arisaema Dracontium (Linn.) Schott. Melet., 1, p. 17, (1832).

Arum Dracontium Linn. Sp. Pl. p. 964, (1753).

Near St. Mary's Academy, both west and east in low grounds. No. 593, U. N. D. Herb., also Nos. 9284, 9323, 2196, 1878, 3192, 592. No. 1997 near the St. Joseph River, Notre Dame, collected by Dr. F. Powers (1889). Also at Munich, Mich., Bertrand, Lawton, St. Joseph. Rum Village south of South Bend, University Farm near Granger, North Liberty, Lake Maxinkuckee, H. W. Clarke.

The seedlings of this plant I have not in early stages been able to distinguish from those of *Arisaema triphyllum*. They begin to germinate from the seeds of the preceeding year about the same time that the older plants appear, and somewhat later than those of *A. triphyllum*. The corn seems to arise from the endosperm part of the seed which persists along time, and so layer after layer sloughs off from as the bottom the true corm appears.

PELTANDRA Rafinesque, Jr. Phys. 89 p. 103, (1819).

Arum Linn. l. c. in part.

Peltandra virginica (Linn.) Kunth, Enum Pl. 3, p. 43, (1841).

Pellandra undulata Raf. l. c. *Arum virginicum* Linn. Sp. Pl. p. 966, (1753).

Common in our marshes. No. 9149 St. Joseph, Mich., also Bertrand, Benton Harbor, San José Park. At the first named locality the plant is extremely abundant south of the city along the Père Marquette R. R. I have never seen so much before at any one place. Chain Lakes, Lakeville, N. Liberty, Michigan City, Tamarack, Smith, also Lake Maxinkuckee. (H. W. Clarke.)

The fruit of our Midland specimens as I have collected them late in fall and quite ripe are green, less than half as large as those of the East, Maryland and the District of Columbia. The seeds of the eastern plants are of a deep purple black to violet color and ripen much earlier. The fruit clusters too of our western plant are but one half as large. The leaves are sometimes narrow, and with small lobes or auricles at the base. It is quite possible that study of fresh material will show our midland plant to be a distinct one.

Family 22. **CALLACEAE** Bartling l. c. in part also
Spach, Hist. Nat. Veg. 12, p. 35, (1846).

Calladea Salisb.

Tribe *Calleae* Spach. do p. 41. Tribe *Arisareae* Dum. Flor.
Belg. p. 162, (1827).

PROVENZALIA F. Petit, Gen. p. 45, (1710), also Adanson
Fam. des Plantes, 2, p. 469, (1763).

CALLA Linn. Syst. Pl. (1735), Gen. Pl. p. 276, (1737), p.
414, (1754), Sp. Pl. p. 968, (1753). *Anguina* Trew Commenc. 51.
ex Linn. *Arioides* Boerhaave, Ind. Alt. Pl. 2, p. 74, (1727).

Provenzialia palustris Raf., New. Fl. N. Am. I, p. 90, (1836),
also Fl. Tell. III, p. 67.

CALLA PALUSTRIS Linn. Sp. Pl. l. c.

Chain Lakes (St. Joseph Co.), Tamarack (Laporte Co.),
Swamp 2 miles E. of Bankson Lake (Cass Co.), Mich.

The plant does not thrive well in these localities and is dis-
appearing. I have been unable to find vigorous or blooming
specimens.

Family 23. **ORONTIACEAE** Spach, Hist. Nat. Veg.
Vol. 12, p. 32, (1846) in part.

Orontiaceae R. Brown ex Dum. Fl. Belg. p. 162, (1827) as
a tribe.

SPATHYEMA Raf. Med. Rep. II, 5, o. 352, (1808).

Symplocarpus Salisbury. Trans. Hort. Soc. Vol. I., p. 266
(1812.)

Symplocarpus (O. Rich.) Syn. Gen. Am. Pl. p. 17 (1814.) also
Nuttall, Gen. 1, p. 105, (1818). *Ictodes* Bigelow, also Med.
Bot. 2, p. 41, t. 24, (1818).

Spathyema foetida (Linn.) Raf. l. c.

Dracontium foetidum Linn. Sp. Pl. p. 967, (1753).

Symplocarpus foetidus (Linn.). Salisb.

Ictodes foetidus (Linn.) Bigelow l. c.

Common in swamps, near springs, and small streams. No.
9370 U. N. D. Herb., Notre Dame, near St. Joseph River, Lakeville,
North Liberty, Woodland, Mishawaka, Granger, also (Elkhart
Co.). Tamarack, Mineral Springs (Porter Co.), also [Deam] Millers,

Dune Park (Lake Co.), Grand Beach, Mich., St. Joseph, Bertrand, Lake Maxinkuckee (H. W. Clarke).

ACORUS Dioscorides¹ also nearly all pre-Linnaean authors, Dodonaeus Pempt. p. 249 or 2, 3, 7, (1583), Marcellus Vergilius, Diosc. p. 10, (1529). Clusius, Hist. Stirp. Com. p. 5, (1546). Lobelius, Obs. p. 30, (1576). Adv. p. 29. *Acorum* Matthioli, Com. Diosc. p. 20, (1554). *Calamus* Auguillara, *Acorum* Dodonaeus Hist. Pl. p. 577, (1557). *Acorum* Caspar Bauhin, Pin. p. 34, (1632), also Lonicer, Camerarius, Tabernaemontanus. *Acorus* Linn. Syst. (1735). Gen. Pl. p. 10, (1737); p. 151, (1754), Sp. Pl. p. 324, (1753). Hort. Cliff. p. 137, (1737).

Acorus verus Morison. Hort. Reg. Bless. p. 5, (1669); Blackwell, Herb. Vol. I, No. 466, (1739).

Acorus palustris Linnaeus Pan Suecus Amoen. 2, p. 245, (1749).

ACORUS CALAMUS Linn. Sp. Pl. l. c. *Acorum legitimum* Clusius Rar. Stirp. Hist. p. 257, (1583); *Calamus odoratus* Hermolaus Barbarus (1530); *Acorum Dioscordis* Camerarius Hort. Med p. 5, (1588); *Acorus undulatus* S. F. Gray Nat. Arr. Br. Pl. 2, p. 159, (1821) ex Stokes Mat. Med. 2, p. 282. *Calamus aromaticus* Petit. Com. (1710).

Smith, Ind. (Laporte Co.), in a small brook, No. 9397. Lowland 2 miles from Nutwood, Ind. (St. Joseph Co.). St. Joseph, Mich. (Berrien Co.); also Stephensville, No. 2725. Sweeney's Crossing on N. J. I & I. R. R. No. 929. (St. Joseph Co.); Lake Maxinkuckee, H. W. Clarke (Marshall Co.).

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(To be Continued.)

Insert after line 2, p. 282, Val. II. AM. MID. NAT.

Order 4. LYCOPODINEAE.

Bartling Ord. Nat. Pl. p. 19, (1830). (Used as a "Class" Name.)

Insert before line 1, p. 281.

Order 2. RHIZOCARPEAE. Bartling do. p. 15.

Insert after line 6, p. 281.

Order 3. EQUISETALES.

Britton, Man. Ed. 2, p. 21, (1895).

¹ *Acoron* Dioscorides. See Daubeney, C. Lectures Roman Husbandry, (1857). App. according to determinations from the Vienna Codex.

Song Season of Our Birds in 1912.

BY BROTHER ALPHONSUS, C. S. C.

Some species are in full song on the day of their arrival. When that date is later than usual, the song season is just so much shorter; for most birds cease singing at the close of the nesting season, which occurs at regular times each spring. The following species begin to sing on the day they arrive: Meadow-lark, Song Sparrow, Vesper Sparrow, Field Sparrow, Towhee, Cowbird, Red-winged Blackbird, Ruby-crowned Kinglet, Yellow Warbler, Warbling Vireo, Yellow-throated Vireo, Red-eyed Vireo, Baltimore Oriole, Orchard Oriole, Rose-breasted Grosbeak, Bobolink, Wood Pewee, Redstart, Maryland Yellowthroat, Purple Martin, Wood Thrush, Cardinal, Fox Sparrow.

Birds whose song usually begins after some days of residence are: Catbird, Brown Thrasher, Scarlet Tanager, Goldfinch, Indigo Bird, House Wren, Hermit Thrush, Mourning Dove and White-throated Sparrow.

The species whose song ends in August or September are those that sing all summer. These are: Robin, Song Sparrow, Vesper Sparrow, Field Sparrow, Cardinal, Towhee, House Wren, Yellow Warbler, Warbling Vireo, Red-eyed Vireo, Indigo Bird, Purple Martin, Goldfinch, Wood Pewee.

The writer was unable to obtain the date of the closing of the song season of the Wood Thrush and the Rose-breasted Grosbeak. This was due to the fact that these species were seen only a few times in spring. On the other hand, the date—July 18—given as the beginning of the song of the Maryland Yellowthroat must be two months later than the usual time the bird arrives and commences to sing. In 1910 the actual date of arrival was May 11.

The bird whose song season was the longest was the Song Sparrow. Other species whose time of singing approached in length to that of the Song Sparrow were: Robin, Cardinal, Vesper Sparrow and Field Sparrow.

Those species whose song lasted but a few days were migrants going farther north and remaining here a very short time. Such were the Purple Finch and the Ruby-crowned Kinglet.

The dates given as the ending of the song season of the birds are the time when they were no longer in full song. No bird ceases to sing all at once. After the date recorded as the ending of the song, there is a period, longer or shorter, during which the bird will sing a few notes, but with less heartiness. Some days the song may be as vigorous as at any time during the song season; but the efforts at singing gradually come to an end, and the woods and fields grow silent.

Even the casual observer will notice the absence of nearly every species at the end of August, with hardly a note to be heard. The closing of the song season of our birds can not but cause a void in the heart of the bird-lover, who has gone out morning after morning to meet his feathered friends, and now—he hears or sees them no more.

NAME OF SPECIES	SONG BEGAN	SONG ENDED
Robin	Mar. 27	Aug. 6
Bluebird	Mar. 25	July 20
Meadowlark	Mar. 19	July 17
Song Sparrow	Mar. 22	Aug. 20
Vesper Sparrow	Apr. 1	Aug. 14
Field Sparrow	Mar. 31	Aug. 20
White-throated Sparrow	May 2	May 15
Fox Sparrow	Apr. 2	Apr. 3
Tree Sparrow	Apr. 3	Apr. 10
Cardinal	Mar. 18	Aug. 5
Towhee	Apr. 2	Aug. 12
Red-winged Blackbird	Apr. 2	July 24
Mourning Dove	Apr. 10	Aug. 1
Hermit Thrush	May 5	May 29
Wood Thrush	May 15	
Cowbird	Apr. 6	July 23
Ruby-crowned Kinglet	May 2	May 4
House Wren	May 8	Aug. 15
Purple Finch	May 2 (1910)	May 5
Yellow Warbler	May 5	Aug. 5
Warbling Vireo	Apr. 30	Sept. 7
Yellow-throated Vireo	May 19	July 29
Red-eyed Vireo	May 19	Aug. 5
Baltimore Oriole	May 2	July 17

Orchard Oriole	May 4	July 12
Rose-breasted Grosbeak	May 14	May 16
Indigo Bird	May 14	Aug. 12
Catbird	May 3	July 21
Brown Thrasher	Apr. 15	June 24
Maryland Yellowthroat	July 18	July 27
Bobolink	May 13	June 19
Purple Martin	June 1	Aug. 18
Scarlet Tanager	May 2	Aug. 1
Redstart	May 3	May 24
Goldfinch	Apr. 21	Aug. 23
Wood Pewee	May 6	Aug. 30

Our Birds in the Spring of 1912.

BY BROTHER APLHONSUS, C. S. C.

The average temperature for the first fourteen days in March was about 28°, and during the rest of the month it was slightly over 40°. To these conditions in the weather is due the small number of migrants that arrived in March. Besides the absence of a number of spring migrants, such winter birds as the White-breasted Nuthatch, Brown Creeper, Hairy Woodpecker, and Chickadee were not once recorded. This observation establishes the fact that these species have a time of migration. The Nuthatch was absent from February 25 until April 10—45 days. The Downy Woodpecker migrated on February 14 and returned on April 6—42 days. The only dates the writer observed the Chickadee were Sept. 8 and Oct. 8, 1911, no record having been made in 1912 until August 1. The Hairy Woodpecker was recorded once—March 2, 1912. The Snowbird is also a winter migrant. The bird disappeared this year on Jan. 29 and reappeared on March 20—an absence of 50 days.

The Hermit Thrush was recorded but twice in April, although the species is usually very common in this month. The Tree Sparrow was seen on the 22 of April, which is late for this species. The cold weather may account for this record, but sometimes a belated individual or two of any species may be seen long after all the others have departed. The solitary record in April of the

Red-headed Woodpecker was remarkable. Fox Sparrows were plentiful this year during the few days they were seen.

The record for May goes only to the 19, for the temperature rose to 81° on that day, and continued at summer heat for the remainder of the month. The presence of an unusually large number of warblers in May gave the writer a splendid opportunity to observe this family. The Magnolia, Tennessee and Myrtle Warblers were seen on 9 days. The Wood Thrush was recorded for the first time in my observations, covering 8 years.

MARCH.

Birds seen on the dates after their names:

Killdeer, 14.	Cardinal, 18.
Purple Grackle, 19, 23, 24, 25, 27, 28, 30, 31.	Meadowlark, 19, 22, 24, 25, 26, 27, 28, 30, 31.
Goldfinch, 21, 31.	Bluebird, 25, 30.
Song Sparrow, 22, 24, 25 to 29, 31.	Chicken Hawk, 26.
Loggerhead Shrike, 31.	Herring Gull, 27.
Crow, 16, 18, 19, 21, 22, 24 to 28, 31.	Field Sparrow, 31.
Snowbird, 20, 21 to 24, 27, 28, 30, 31.	Blue Jay, 16, 18, 19, 21, 22, 23, 26, 27, 28, 30.
	Tree Sparrow, 31.
	Downy Woodpecker, 31.
Total number of species seen, 16.	

APRIL.

Birds seen on the dates after their names:

Crow, 1 to 6, 8, 10 to 16, 18, 19, 22 to 25, 27 to 30.	Blue Jay, 1 to 25, 27, 29, 30.
Song Sparrow, 1 to 30.	Meadowlark, 1 to 17, 19 to 30.
Snowbird, 1 to 25, 27 to 30.	Purple Grackle, 1, 2, 3, 5, 6, 8 to 30.
Tree Sparrow, 1 to 4, 6 to 10, 22.	Killdeer, 1, 4, 5, 6, 14, 15, 17.
Robin, 1, 2, 3, 5, 6, 8 to 30.	Cardinal, 2, 3, 6.
Fox Sparrow, 2, 3, 4, 5, 6.	Towhee, 2, 11, 15, 20.
Bluebird, 2, 3, 5, 6, 10, 11, 18, 19, 23, 24, 25, 27, 30.	Field Sparrow, 2, 3, 5, 6, 8 to 17, 19 to 21, 23, 25, 26, 28, 30.
Vesper Sparrow, 1, 3, 4, 6, 7, 8, 10 to 17, 19 to 30.	Red-winged Blackbird, 2, 5, 9, 11, 13, 15, 16, 20, 22 to 25, 27 to 30.
Phoebe, 2, 6.	
Hermit Thrush, 5, 18.	

- Mourning Dove, 3, 10, 14, 15,
 19, 20 to 25, 27 to 30.
 Golden-crowned Kinglet, 6, 8 to
 13, 16, 17, 18, 20, 25.
 Kingfisher, 8, 10, 13, 17.
 Goldfinch, 10, 21, 25.
 Loggerhead Shrike, 10, 11.
 Downy Woodpecker, 11, 12, 13,
 15, 16.
 Chipping Sparrow, 5, 7, 11 to
 30.
 Brown Thrasher, 15, 16, 19, 20,
 22, 23 to 28, 30.
 Bobwhite, 21.
 Spotted Sandpiper, 22, 23, 26,
 28, 29.
 Golden-crowned Kinglet, 27.
 Total number of species seen, 40.
- Cowbird, 6, 8, 9 to 30.
 Screech Owl, 7, 18.
 Brown Creeper, 6, 8, 10, 12,
 15, 23, 25, 29.
 Flicker, 10 to 18, 20 to 23, 25,
 26, 28, 29, 30.
 White-breasted Nuthatch, 10,
 12, 13, 23, 27, 28, 30.
 Sapsucker, 12 to 15, 17, 18, 22,
 23, 26.
 Barn Swallow, 13, 15, 21, 24,
 29, 30.
 Myrtle Warbler, 16, 24, 25, 28,
 29.
 Red-headed Woodpecker, 26.
 Bleak and White Warbler, 29.
 Warbling Vireo, 30.

MAY.

Birds seen on the dates after their names:

- Crow, 2, 9, 11, 13, 14, 16, 17.
 Bobolink, 13, 14, 15.
 Robin, 1 to 19.
 Meadowlark, 1 to 8, 10 to 19.
 Snowbird, 3.
 Towhee, 1, 3, 4, 6.
 Vesper Sparrow, 1 to 11, 13 to
 19.
 Mourning Dove, 1 to 10, 12, 13,
 14, 16 to 19.
 Cowbird, 1 to 19.
 Ruby-crowned Kinglet, 2, 4.
 House Wren, 3, 4, 8, 10, 11, 13,
 14, 15, 16, 18.
 White-throated Sparrow, 2, 3,
 4, 5, 6, 7, 10, 15, 16, 17.
 Yellow Warbler, 3, 4, 5, 7, 16,
 19.
 Baltimore Oriole, 2 to 19.
- Blue Jay, 1 to 7, 10 to 19.
 Bluebird, 5, 26.
 Song Sparrow, 1 to 19.
 Purple Grackle, 1 to 19.
 Killdeer, 1, 5, 15.
 Field Sparrow, 2 to 11, 12, 13,
 14, 16, 17, 18.
 Red-winged Blackbird, 1, 3, 4
 to 8, 11, 12, 13, 16, 19.
 Hermit Thrush, 3 to 8, 10, 12
 to 19.
 Kingfisher, 1, 3, 4, 6, 12, 13.
 Redstart, 3, 4.
 Yellow Palm Warbler, 5, 6, 10,
 12, 13, 15, 16, 19.
 Chimney Swift, 1 to 8, 10, 14,
 15, 16 to 19.
 Warbling Vireo, 2, 7, 10, 11,
 13 to 19.

- Rose-breasted Grosbeak, 13 to 16.
 Orchard Oriole, 4 to 7, 8, 10, 11, 13, 14, 18, 19.
 Black-throated Green Warbler, 3, 4, 10, 13, 19.
 Blackburnian Warbler, 3.
 Least Flycatcher, 12, 13.
 Creasted Flycatcher, 6, 19.
 Black and White Warbler, 5, 7, 14.
 Sandpiper, 1, 4 to 19.
 Chipping Sparrow, 1 to 19.
 Brown Thrasher, 1 to 19.
 Downy Woodpecker, 5, 10, 13, 15.
 Goldfinch, 4, 5, 7, 8, 10 to 19.
 Flicker, 1 to 7, 10, 12, 13, 14, 17, 18.
 Tennessee Warbler, 2, 4, 5, 7, 12, 13, 14, 15, 16.
 Yellow-throated Vireo, 19.
 Red-breasted Nuthatch, 4, 16.
 Wood Pewee, 6, 7, 15, 18, 19.
 Cape May Warbler, 5, 15, 16, 18.
 Yellow-throated Warbler, 13, 14, 18, 19.
- Indigo Bird, 14 to 19.
 Catbird, 2 to 19.
 Kingbird, 2 to 11, 13 to 19.
 Black-throated Blue Warbler, 4.
 White-crowned Sparrow, 15.
 Canadian Warbler, 19.
 Scarlet Tanager, 2.
 Wood Thrush, 15, 16.
 Nighthawk, 19.
 Red-headed Woodpecker, 2 to 8, 10 to 19.
 Myrtle Warbler, 3, 5, 6, 7, 8, 13, 16, 17.
 Barn Swallow, 3, 4, 5, 7, 8, 13, 16, 17.
 White-breasted Nuthatch, 7, 13.
 Bay-breasted Warbler, 13, 14, 17.
 Bittern, 1, 12.
 Black-poll Warbler, 3, 4, 10, 18.
 Nashville Warbler, 3.
 Red-eyes Vireo, 19.
 Chestnut-sided Warbler, 5, 13, 14, 17.
 Magnolia Warbler, 5, 10, 13, 14, 15, 16, 17, 18, 19.

Total number of species seen, 66.

Total number of species seen in spring, 77.

Some Midland Dogbanes.

BY J. A. NIEUWLAND.

Apocynum Carolini Nwd., nov. sp.

Planta verisimiliter metralis foliosa glabra, cum caule viridi et ramis multis rubescentibus inflorescentiam primam longe excedentibus circa 3.5 dm. Folia suberecta 9-10 cm longa et 2-2.5

cm. lata, in ramis et ramulis minora, lanceolata, vel anguste elliptico-lanceolata, vel etiam oblonga, glabra, viridia superiore facie, pallida vel glaucescentia inferiore. Folia cum venis divaricatis, apice acuminato aristato, (arista saepe 5 mm. longa, vel longior) basi cuneato vel etiam anguste cuneato. Petioli circa 5 mm. longi; internodi 2.5-6 cm. longi. Pedunculi circa 1.5 cm. longi, et pedicelli 2-4 mm. longi cum bracteis scariosis linearibus ad basim ornati. Flores pauci tubulati 3 mm. longi et 1 mm. lati in caulis summitate tantum aggregati. (Quando vero flores in prima inflorescentia vel defloruerunt vel jam lobos fecerunt adhuc submaturos, deinde alii quidam (2 vel 3) cymi in ramis apparent.) Corollae segmenta 1 mm. longa, margine involuti, triangularia, incurvata etiam arescentibus post floribus. Sepala anguste lanceolata vel aristiformia supra mediam partem. Lobi circa 13 cm. long (adhuc quidem immaturi) et verisimiliter perpauci.

Plant probably and apparently a meter high rather leafy, glabrous, with greenish stems and rather numerous long red or reddish branches. Branches and twigs much exceeding the terminal inflorescence (about 3.5 dm.) Leaves of the stem 9-10 cm long and 2-2.5 cm. wide, smaller and suberect on the branches, lanceolate or narrowly elliptic-lanceolate or oblong, green above pale or glaucescent beneath with veins diverging from the midrib. Apex acuminate, plainly aristate, bristle sometimes 5 mm. long or more. Base cuneate or sharply and narrowly so. Petioles about 5 mm. long; internodes 2.5-6 cm. long. Peduncle about 1.5 cm. long at flowering and much longer in fruit. Pedicels 2-4 mm. long arising from a number of scarious bracts at the base. Flowers few (about 12 or 13) tubular 3 mm. long, 1 mm. wide. Inflorescence strictly terminal to the main stem and 2 or 3 others produced only later when the terminal has run to fruit or failed to produce fruit. Corolla segments triangular involute on the margins, scarcely opening, never spreading in the slightest manner, nearly 1 mm. long. Sepals narrowly lanceolate or apparently aristate beyond the upper half.

Pods few, 13 cm. long (in the specimen still immature.)

This plant belongs to the *Cannabinum* group, but is not closely related to *A. cannabinum* itself. The type of the species consists of two sheets, No. 10563 of my herbarium, sent me from somewhere near Detroit, Mich., by Mr. R. Carolin. This enthusiastic collector

of plants of that region was formerly a student in the Botanical Department of the University. The specimens bear his number 880. He had intended sending me further details of this and other interesting plants of that locality forwarded with these specimens referred to, but his sudden, early death intervened. I was unable to obtain any more exact knowledge of date, habitat or location beyond what I have mentioned. The plants were probably collected in the summer of 1912.

The very narrow characteristically pointed aristate leaves, and the tubular whitish rather small flowers serve to distinguish the plant from all others. The habit of flowering with few cymes of different ages is striking. The pods are rather long and often apparently united at their apex bearing the minute remains of the wilted corolla.

Apocynum tomentellum Nwd., nov. sp.

Planta 1 m. alta vel altior foliosa: caulis glabra: ramuli sparse hirtelli. Folia plus minusve erecta, 7-12 cm. longa, 3-6 cm. lata in caule, 3-7 cm. longa, 1-4 cm. lata in ramis et ramulis. Folia ovata, ovalia, elliptica-vel etiam obovata, apice mucronato-cuspidato, obtuso vel rotundato vel aliquando subacuto; basi rotundata vel obtusa vel aliquando cuneata. Folia in superficie ad marginem et in venis sparse pubescentia, inferiore quidem facie dense tomentulosa pilis albis recurvatis, et praesertim juvenilia dense et molliter tomentella. Petioli dense tomentosa 2-5 mm. longi. Cymi permulti subsessilia vel cum pedunculo usque 1 cm. longo: pedicelli tomentoso-hirtelli. Bractaeae permultae, lineares, hirtellae. Sepala lineari-lanceolata, hirtella vel tomentulosa, corollae segmenta fere aequantia. Corolla late campanulata cum segmentis divaricatis, rotundatis albescentibus 2-3 mm. longa et lata. Lobi bini ex cymis oriuntur, pro planta breves 6.5-11 cm. long, subaequales et ii in ramis et ramulis successive longiores.

Plant 1 meter high or more, very leafy. Stem glabrous, branches and twigs especially sparsely hirtellous. Leaves more or less erect 7-12 cm. long and 3-6 cm. wide on the main stem; 3-7 cm. long and 1-4 cm. wide on branches. Leaves ovate, oval, elliptic or sometimes obovate; apex mucronate cuspidate, obtuse or rounded or sometimes subacute; base rounded or obtuse or even broadly cuneate. Surface of the leaves sparsely pubescent

on veins and near the margin, the lower face densely tomentulose with white somewhat tangled hairs, and when young particularly softly and densely white tomentulose. Petioles rather densely tomentose 2-5 mm. long. Cymes numerous subsessile or with a peduncle of almost the length of one centimeter. Pedicels densely tomentose-hirtellous. Bracts numerous, linear, hirtellous. Sepals linear-lanceolate, hirtellous, or tomentulose almost or equaling the corolla segments. Corolla 2-3 mm. long and wide, broadly campanulate with spreading whitish segments rounded at the apex. Pods arising in pairs successively from stem and branch cymes, rather small 6.5-11 cm. long subequal, those produced later being larger.

I select as type No. 9733 of the Herbarium of the University collected along a branch of the Michigan Central Railroad near the boat house at Notre Dame. The specimen was collected July 8, 1912. As fruit-type I may designate No. 10304 gathered along the road between Cartier Athletic Field and the Ice-house. The plant is very abundant in this locality, but fruiting specimens are never numerous. What will probably prove to be the same species, I have found on the east shore of Upper Chain Lake, about 10 miles west of South Bend, Ind. I noticed and carefully examined this plant several days before I found the flowering type referred to, but failed to collect specimens. I expected to gather such on the return from the north end of the lake and later decided to botanize on the west shore. As I left this part of the country shortly after, and did not return until late in fall, I have had as yet no occasion to obtain specimens from the Chain Lake region.

Apocynum cinereum Nwd. nov. sp.

Planta foliosa cum foliis perparvis *A. isophylli* quoad formam et magnitudinem, sed dense cinereo-glaucous vel etiam pulverulenta et pallida praecipue in facie inferiore, in superiore quidem pallida vel viridescens. Internodi breves 2.5-4 cm. longi; rami quoque pallidi qui inflorescentiam superant. Cymis pedunculatis; flores multi, 3-4 mm. longi campanulati. Corollae segmenta angustata, apice obtuso vel rotundato, Corolla infra mediam partem fissa. Sepala lineari-lanceolata, vel lanceolata sinum corollae superantia. Flores albescentes vel viridescens.

Plant leafy with the foliage of *A. isophyllum* Greene, as regards shape and size, but densely cinereous glaucous or even pulverulent,

pallid especially on the lower face: upper face pallid or slightly greenish. Internodes short, 2.5-4 cm. long; branches also whitish glaucous surpassing the first inflorescence. Cymes peduncled: flowers numerous 3-4 mm. long, campanulate. Corolla segments narrow, obtuse or rounded at the apex and cleft below the middle. Sepals linear-lanceolate or lanceolate surpassing the sinus of the corolla lobes. Flowers whitish or greenish.

Although the foliage of this plant as to size and shape resembles that described by Dr. Greene for *A. isophyllum*,* the dense white powdery glaucousness of the leaves is strikingly characteristic as vegetative mark. The flowers are very different, campanulate creamy white to greenish with long corolla lobes, and sepals reaching above their sinuses. The plant is one of the most leafy I have seen in the genus. I designate as type a single specimen No. 9167, gathered by myself in the dune region of Lake Michigan at Millers, Lake Co., Indiana. The plant was collected July 8, 1911, and is in the Herbarium of the University of Notre Dame.

Dept. of Botany.

Notre Dame, Ind.

Evactoma.

BY J.-A. NIEUWLAND.

The plant now generally called *Silene stellata* (Linn.) Aiton, has held a rather uncertain place in botany according to the opinions at least of the older phytographers as is evident from the fact of its having been relegated several times from one genus to another and back again. Linnaeus himself had the plant in *Cucubalus*.¹ Aiton transferred it to *Silene*.² Rafinesque³ considered it as sufficiently characteristic to constitute the type of a new genus which he called *Evactoma*.

¹ Linnaeus, C. Species Plantarum p. 414, (1753). also 2nd Ed. p. 592, (1762).

Hort. Ups. p. 110, (1737) "*Cucubalus foliis quaternis*."

² Aiton, f. Hoetus Kewensis, 3: p. 84 (1811).

³ Rafinesque, C. S. Autikon Botanikon, pt. 1, Cent. III., p. 23, (1815-1840). The word evidently according to his own explanation of derivation should be written *Euactoma*, from the Greek *εὖ*, well *τέμνω*, *ἐτομον*, (root *τομή*)-cut *ἀκρίς*, ray or petal, referring to the deeply cleft petals.

The habit of the plant and certain important characters of the flower, such for example as crownless corolla lend favor to that author's view. The following is Rafinesque's diagnosis:

"*Evactoma* Raf. diff. *Silene* et *Cucubalus* cal. infl. camp. 5 fid. membranosis petalis 5 flabellatis, multifidis non coronatis, stylis 3, caps 3 loc. 3 valvis, fal. verticill. fl. subracem. This deserves to be a G. by habit and characters, the name means well cut star."

Evactoma stellata Raf. Cucub. et Sil do. O. N. America."

Silene stellata (Linn.) Ait, l. c.

Cucubalus stellatus Linn. l. c.

The type of the genus is with scarcely any doubt the glabrous membranous leaved plant of Virginia and farther South. The plant of the west and of farther North generally is scabrous pubescent especially on the inflorescence, stem, and leaves. The petals, are more deeply and unequally cleft and the narrow lobes more numerous. This latter character I have found difficult to determine to my utter satisfaction as the flowers of the herbarium specimens are, when not wanting, in rather poor condition. I have examined the specimens in the U. S. National Herbarium, but live material should be compared to obtain quite satisfactory results. I have therefore deemed it advisable to lay not too much stress on this character for the present and consider the northern and western plant as only a variety of the other. Though the specimens of the latter are more numerous in herbaria, I do not hesitate to designate the southeastern plant as the typical *E. stellata*.¹ Most authors before Linnaeus are silent as to the pubescence of the plant and that author himself does not mention it. John Ray, however, one of the first if not the very first unmistakably to describe the plant designates it as "*Lychnidem Caryophyllum Virginianum gentianae foliis glabris quatuor ex singulis geniculis caulem amplexantibus, flore amplo fimbriato*. Ray, Hist. p. 1895 (1688). From this it is evident that the southern plant was first known in Europe, and found in the botanical gardens there. I need not hesitate then in describing the western and more northern plant as

Evactoma stellata var. *scabrella* var. nov.

Silene stellata var. *scabrella*.

¹ Bot. Mag. p. 1107, vol. 14. P. Miller, Gard. Dict. Ed. 7, (1759) Morison, R. Hist. 2 p. 577. Banister's Catalogue in Ray 2, p. 1927. J. Ray, 3 p. 246. Petiver. Sic. 30. Clay 7 no. 245 etc.

Planta rigidior et ejus partes imprimis folia, caules, et inflorescentia, scabrellae: folia quoque densiora quam in specie: petala multifida segmentis linearibus irregularibus linearibus: folia margine scabro-ciliata.

The plant though as little branched is less slender than the type.

The following are rather typical specimens of *E. stellata* in the U. S. National Herbarium. The plants were examined in the beginning of September, 1912. All the others with a few rather equivocal exceptions were found to be typical of the variety. I indicate the typical species specimens because they are not so numerous. R. Harper's 1101, Chatahoochie River, Ga. VII, 19, 1901. U. S. H. No. 400362. A. A. Heller's N. of Tucquan, Lancaster, Co. Pa. VII, 24, 1901. U. S. H. No. 406955. Apparently the most northern limit. W. Palmer's, Bedford Co. Va. VII, 24, 1906. U. S. H. No. 605061. W. Pollock's Bucklin Upshur Co., W. Va. VIII, 13, 1895. U. S. H. 261684. T. Kearney, Jr., 618. French Broad River. IX, 17, 1897. U. S. H. No. 313305. Albert Ruth's 197, Lookout Mountain, Ga. VII, 1898. U. S. H. No. 345380. E. C. Townsend's, Spring Mtn. Polk Co., N. Carolina, VII, 23, 1897. U. S. H. No. 341735. C. H. Boynton's 37, Highlands, N. C., VIII, 1888, U. S. H. No. 8830. J. K. Small's Summit Iron Mts. Skull Cap. Symth Co., SW. Va. VIII, 11 and 21, 1892. U. S. H. No. 8841. Miss A. Moore's No. 5 Cades Mt. Tennessee, VIII, 1895. U. S. H. No. 250437. C. L. Pollard's and W. Maxon's, De Kalb Co., Ga. Stone Mt. VIII, 12 and 18, 1900. U. S. H. No. 443001. Thaxter's, Cullowhee, N. C. (ex Herb. A. Gray) 1887. U. S. H. 415904.

As types of the new variety I may designate No. 10541 gathered at Notre Dame, No. 3497 collected by W. W. Calkins, at Berwyn, Ill. (his own No. 181) is in bud and flower, another 7333 collected by the same at Hyde Park, Ill. is typical, also No. 3491, by Dr. F. Powers at Notre Dame, and my own fruit specimens No. 2136 are all examples from my herbarium.

Notre Dame, Ind.

Dept. of Botany.

Nesting Habits of Our Birds.

BY BROTHER ALPHONSUS, C. S. C.

ROBIN.

Planesticus migratorius.

The Robin is the earliest of our birds to build its nest. I have seen nests begun in the middle of March when the weather was mild. These early attempts at nesting, however, often prove disastrous, for very cold days are sure to follow, making it impossible for the birds to sit continuously on the eggs. So the nest is abandoned, and another is built later. The Robin has more than one brood, young birds appearing as late as August.

PURPLE GRACKLE.

Quiscalus quiscula.

The Grackle selects evergreen trees for its nesting place. A grove of pines or spruces will always have a number of Grackles nesting there, and they will soon let any intruder know that they are in possession by flying down toward him in a rather threatening manner. The young appear early and make much noise while waiting for food. After the nesting season the Grackles gather in great flocks.

MOORNING DOVE.

Zenaidura macroura.

The nest of the Dove is found usually in evergreens, and is built so very poorly of a few sticks that one would wonder how the eggs fail to fall to the ground. June is the month that the Dove chooses for nesting, but the young may not be fledged until July. I have found young Doves much earlier, however, a fact that shows the nesting season of the species is sometimes earlier, or that there is more than one brood.

COWBIRD.

Molothrus ater.

The Cowbird is our only bird that never builds a nest of its own. The eggs are stealthily deposited into the nests of other species, which have the additional care of rearing a lusty young Cowbird. Frequently such species as the Chipping Sparrow and the Song Sparrow are imposed upon in this manner, and the

larger Cowbird gets the greater share of the food. Sometimes the nest become so crowded that the stronger Cowbird will rest on the edge of the nest.

RED-WINGED BLACKBIRD.

Agelaius phoeniceus.

The Red-wing is a bird of the swamps, where it builds its nest, which is built either on the ground or suspended from the rushes. The young are fledged late in June, there being but one brood. During the nesting season, the old birds manifest much concern whenever a pedestrian passes the place where the nest is situated. The males will follow the intruder, scolding all the while, until he has got away from the vicinity of the nest.

MEADOWLARK.

Sturnella magna.

This well-known species of the meadows places its nest on the ground in some grassy field. About haying-time the young birds are fledged, but sometimes they are still in the nests when the mowing-machine is working. Then there is great excitement among the Meadowlarks, and individuals may be seen flying hither and thither, and showing great alarm by their incessant calling.

YELLOW-BILLED CUCKOO.

Coccyzus americanus.

The Cuckoo builds its nest sometimes in the top of tall forest trees and again in such a low position as may be found in a young box-elder. A habit peculiar to the bird is laying one egg at a time and hatching it before laying another. To this characteristic is due the fact that young Cuckoos may be seen as late as the end of September. I was astonished one day to see an old Yellowbill feeding a young bird on the 30th of September.

RED-HEADED WOODPECKER.

Melanerpes erythrocephalus.

Holes in trees or telephone poles are made by the Red-headed Woodpecker as its nesting-place. Walking along a country road, one may find nearly every pole bored by the Red-heads. In this respect they are an injurious species, for the poles used for nesting are often easily broken by wind and weather. While feeding the young, the old birds make continuous trips to and from the nest.

When the young have left the nest, or even before, the old birds are much given to scolding when any person passes by the location of the birds.

WOOD PEWEE.

Myiochanes virens.

The nest of the Pewee is placed on a branch of some forest tree, and is made largely of moss. The old birds may be seen feeding their young in June. Frequently, a Pewee will sit on a low branch and fly out from it repeatedly for passing insects. Occasionally one of the birds will fly very near an observer, wholly intent on catching an insect.

BALTIMORE ORIOLE.

Icterus galbula.

The nest of the Baltimore Oriole is the most ingeniously constructed of all our birds' nests. Made of string, strips of bark and grasses, and hung from the slender branches of such trees as the maple, elm and willow, the nest is a thing that commands the admiration of every observer. Soon after the arrival of the species, early in May, the building of the nest is begun. The eggs are as beautiful, and similarly marked, as those of the Orchard Oriole. About the middle of June, the first piping notes of the young Baltimores may be heard in many places, for fortunately this beautiful bird is numerous. Within a week of the beginning of piping note, the young will essay an attempt to leave the nest. Some may succeed, while others will get as far as the edge of the nest, make sundry efforts to fly, and then return again to the nest. The last of the young Baltimores are not fledged until nearly the middle of July.

I once saw a Baltimore's nest built in a weeping willow, just over a cement walk. The branches to which the nest had been hung were very slender and swayed greatly whenever the wind was strong. To obviate this obstacle to the safety of the eggs, the birds attached a piece of string to the nest and tied the other end to a branch of a neighboring tree. This feat, which was considered very remarkable to every passer-by, seemed almost a human act.

(To be continued.)

